INDEX TO VOLUME 109

- ALLEN, Jon C. Mathematical models of species interactions in time and space, 319
- BATZLI, GEORGE O., AND FRANK A.
 PITELKA. Vole cycles: test of
 another hypothesis, 482
- Bekoff, Marc. Animal play and behavioral diversity, 601
- BEYER, W. NELSON. Types of seed dispersal: their effects on species diversity of trees, 103
- BOOTH, R. S. See O. L. SMITH
- BOTKIN, DANIEL B., AND MATTHEW J. SOBEL. Stability time-varying ecosystems, 625
- BROCKELMAN, WARBEN Y. Competition, the fitness of offspring, and optimal clutch size, 677
- CARACO, THOMAS, AND LARRY L. WOLF. Ecological determinants of group sizes of foraging lions, 343
- CARSON, HAMPTON L. The genetics of speciation at the diploid level, 83
- CHAPLIN, S. B. See P. FEINSINGER
- CHAPLIN, SUSAN BUDD. See PETER FEINSINGER
- CHARLESWORTH, B. See D. CHARLES-WORTH
- CHARLESWORTH, D., AND B. CHARLES-WORTH. Sexual selection and polymorphism, 465
- CHARNOV, ERIC L., AND JOHN R. KREBS. The evolution of alarm calls: altruism or manipulation? 107

- CHRISTIANSEN, FREDDY BUGGE. Hard and soft selection in a subdivided population, 11
- DEMETRIUS, LLOYD. Reproductive strategies and natural selection, 243
- DOYLE, ROGER W. Settlement of planktonic larvae: a theory of habitat selection in varying environments, 113
- EISENBERG, ROBERT M. See L. E. HURD
- ELLIOT, PHILLIP F. Longevity and the evolution of polygamy, 281
- EMLEN, J. MERRITT. Niches and genes: some further thoughts, 472
- EMLEN, J. MERRITT, AND M. G. R. EMLEN. Optimal choice in diet: test of a hypothesis, 427
- EMLEN, M. G. R. see J. MERRITT EMLEN
- ENDERS, FRANK. The influence of hunting manner on prey size, particularly in spiders with long attack distances (Araneidae, Linyphiidae, and Salticidae), 737
- ENDLER, JOHN A. See ROBERT M.
 MAY
- EOFF, MICHAEL. Artificial selection in Drosophila melanogaster females for increased and decreased sexual isolation from D. Simulans males, 225
- FEINSINGER, P., AND S. B. CHAPLIN. Erratum, 787

- Feinsinger, Peter, and Susan Budd Chaplin. On the relationship between wing disc loading and foraging strategy in hummingbirds, 217
- FELSENSTEIN, JOSEPH. A pain in the torus: some difficulties with models of isolation by distance, 359
- FERGUSON, ANTHONY. Evolution, Von Frisch, and teleology, 369
- Gabow, Stephen A. Behavioral stabilization of a baboon hybrid zone, 701
- GADGIL, MADHAY, AND CHARLES E.

 TAYLOR. Plausible models of sexual selection and polymorphism,
 470
- GAFFNEY, PATRICK, M. Roots of the niche concept, 490
- GILL, FRANK B., AND LARRY L. WOLF. Foraging strategies and energetics of east African sunbirds at mistletoe flowers, 491
- GILLESPIE, JOHN H. The role of migration in the genetic structure of populations in temporally and spatially varying environments. I. Conditions for polymorphism, 127
- GILPIN, MICHAEL E. Limit cycles in competition communities, 51
- GLIDDON, CHRIS, AND CURTIS STRO-BECK. Necessary and sufficient conditions for multiple-niche polymorphism in haploids, 233
- Green, Richard, and P. R. Painter. Selection for fertility and development time, 1
- GRIGG, RICHARD W. Age structure of a longevous coral: a relative index of habitat suitability and stability, 647
- Gunter, Gordon. Observational evidence that shortwave radiation gives orientation to various in-

- sects moving across hard-surface roads, 104
- HAAS, PETER H. Some comments on use of the species-area curve, 371
- HAINSWORTH, F. REED, AND LARRY L. WOLF. Wing disc loading: implications and importance for hummingbird energetics, 229
- HEED, W. B. See J. SPENCER JOHN-STON
- HURD L. E., AND ROBERT M. EISEN-BERG. Divergent selection for geotactic response and evolution of reproductive isolation in sympatric and allopatric populations of houseflies, 353
- INOUYE, DAVID W. Why don't more hummingbird-pollinated flowers have dark-colored pollen? 377
- Johnston, J. Spencer, and W. B. Heed. Dispersal of *Drosophila*: the effect of baiting on the behavior and distribution of natural populations, 207
- KAVANAU, J. LEE, AND JUDITH RAMOS. Influences of light on activity and phasing of carnivores, 391
- Kercher, J. R., and H. H. Shugart, Jr. Trophic structure, effective trophic position, and connectivity in food webs, 191
- KIMURA, MOTOO. See TOMOKO OHTA KRAMM, KENNETH R. Entrainment of circadian activity rhythms in squirrels, 379
- KREBS, JOHN R. See ERIC L. CHARNOV
- Kulesza, George. Comment on "Niche, habitat, and ecotope," 476

- KUTTNER, ROBERT E. On infant convenience and female breast form, 596
- Levin, Donald A. Pest pressure and recombination systems in plants, 437
- LEVIN, S. A. See R. H. WHITTAKER LEVIN, SIMON A. On the care and use of mathematical models, 785
- McMahon, Thomas A. Allometry and biomechanics: limb bones in adult ungulates. 547
- McMurtrie, Ross E. See Robert M. May
- McNaught, D. C. See O. L. Smith
- McNaughton, S. J. r- and K-selection in Typha, 251
- MARUYAMA, T. See M. SLATKIN
- Matheson, A. C., and P. A. Parsons. Long-term exposure to CO₂ in Drosophila melanogaster and Drosophila simulans, using isofemale strains from natural populations, 593
- MAY, ROBERT M., JOHN A. ENDLER, AND Ross E. McMurtrie. Gene frequency clines in the presence of selection opposed by gene flow, 659
- MORTON, EUGENE S. Ecological sources of selection on avian sounds,
- MURDOCH, WILLIAM W. See ALLAN OATEN
- NOTTEBOHM, FERNANDO. Continental patterns of song variability in Zonotrichia capensis: some possible ecological correlates, 605
- OATEN, ALLAN, AND WILLIAM W. MURDOCH. Functional response

- and stability in predator-prey systems, 289
- OATEN, ALLAN, AND WILLIAM W. MURDOCH. Switching, functional response, and stability in predator-prey systems, 299
- Ohta, Tomoko, and Motoo Kimura.

 Theoretical analysis of electrophoretically detectable polymorphisms: models of very slightly
 deleterious mutations, 137
- O'NEILL, R. V. See O. L. SMITH
- OTTE, DANIEL. On the role of intraspecific deception, 239
- PAINTER, P. R. See RICHARD GREEN PARKER, WILLIAM S. See ERIC R. PIANKA
- PARSONS, P. A. See A. C. MATHESON
- PATTEN, BERNARD C. Ecosystem linearization: an evolutionary design problem, 529
- Petersen, Richard. The paradox of the plankton: an equilibrium hypothesis, 35
- Peterson, Charles H. The effects of clumping on sample evenness, 373
- PIANKA, ERIC R., AND WILLIAM S. PARKER. Age-specific reproductive tactics, 453
- PITELKA, FRANK A. Sec GEORGE O. BATZLI
- Pulliam, H. Ronald. Diet optimization with nutrient constraints, 765
- RAMOS, JUDITH. See J. LEE KAVANAU ROOT, R. B. See R. H. WHITTAKER
- ROTHSTEIN, STEPHEN I. Evolutionary rates and host defenses against avian brood parasitism, 161
- ROUGHGARDEN, JONATHAN. A simple model for population dynamics in stochastic environments, 713

SCHAAL, BARBARA A. Population structure and local differentiation in *Liatris cylindracea*, 511

SHUGART, H. H. See O. L. SMITH SHUGART, H. H., JR. See J. R.

KERCHER
STANGER POWEROW The Wohland

SINNOCK, POMEROY. The Wahlund effect for the two-locus model, 565

SLATKIN, M., AND T. MARUYAMA. The influence of gene flow on genetic distance, 597

SMITH, O. L., H. H. SHUGART, R. V. O'NEILL, R. S. BOOTH, AND D. C. McNaught. Resource competition and an analytical model of zooplankton feeding on phytoplankton, 571

SNYDER, GREGORY K., AND WESLEY W. WEATHERS. Temperature adaptations in amphibians, 93

Sobel, Matthew J. See Daniel B. Botkin

STADDON, J. E. R. A note on the evolutionary significance of "supernormal" stimuli, 541

Stout, Jean, and John Vandermeer.

Comparison of species richness
for stream-inhabiting insects in
tropical and mid-latitude streams,
263

STRATHMAN, RICHARD R. Limitations on diversity of forms: branching of ambulacral systems of echinoderms, 177 STROBECK, CURTIS. Selection in a finegrained environment, 419

STROBECK, CURTIS. See CHRIS GLID-DON

TAYLOR, CHARLES E. See MADHAV GADGIL

Valerio, Carlos E. A unique case of mutualism, 235

VANDERMEER, JOHN. See JEAN STOUT VANDERMEER, JOHN H. A graphical model of insect seed predation, 147

Waldon, Michael G. Competition models, 487

WARNER, ROBERT R. The adaptive significance of sequential hermaphroditism in animals, 61

WEATHERS, WESLEY W. See GREGORY K. SNYDER

WHITTAKER, R. H., S. A. LEVIN, AND R. B. Root. On the reasons for distinguishing "Niche, habitat, and ecotope," 479

WILSON, DAVID SLOAN. The adequacy of body size as a niche difference, 769

WOLF, LARRY L. See THOMAS CARACO WOLF, LARRY L. See FRANK B. GILL WOLF, LARRY L. See F. REED HAINSWORTH

